| SUBSCRIPTION VERSION DATA MODEL | | | |
|---|---|---|---|
| **Attribute Name** | **Type (Size)** | **Required** | **Description** |
| Stamp | | | |
| Activation Request Time Stamp | T | | The date and time that the Subscription Version activation request was made by the new Service Provider. |
| Activation Broadcast Date | T | | The date and time that broadcasting began to all local SMS systems for the activation of the Subscription Version. |
| Activation Broadcast Complete Time Stamp | T | | The date and time that at least one Local SMS system successfully acknowledged the broadcast or the retries were exhausted for the activate. |
| Disconnect Request Time Stamp | T | | The date and time that the Subscription Version disconnect request was made by the local Service Provider. |
| Disconnect Broadcast Time Stamp | T | | The date and time that broadcasting began to all local SMS systems for the disconnect of the Subscription Version. |
| Disconnect Broadcast Complete Time Stamp | T | | The date and time that at least one Local SMS system successfully acknowledged the broadcast or the retries were exhausted for the disconnect. |
| Effective Release Date | T | | The date that the Subscription Version is to be deleted from all Local SMS systems. |
| Customer Disconnect Date | T | | The date that the Customer's service was disconnected. |
| Pre-Cancellation Status | E | | Status of the Subscription Version prior to cancellation. Valid enumerated values are:<br>• X - Conflict (0)<br>• P - Pending (2)<br>• DP - Disconnect Pending (6) |
| Old Service Provider Cancellation Time Stamp | T | | The date and time that the Old Service Provider acknowledged that the Subscription Version be canceled. |
| New Service Provider Cancellation Time Stamp | T | | The date and time that the New Service Provider acknowledged that the Subscription Version be canceled. |
| Cancellation Time Stamp | T | | The date and time that the Subscription Version became canceled. |

| SUBSCRIPTION VERSION DATA MODEL | | | |
|---|---|---|---|
| **Attribute Name** | **Type (Size)** | **Required** | **Description** |
| Old Time Stamp | T | | The date and time that the Subscription Version became old. |
| Conflict Time Stamp | T | | The date and time that the Subscription Version was last placed in conflict. |
| Conflict Resolution Time Stamp | T | | The date and time that the resolution of a Subscription Version in conflict is acknowledged. |
| Create Time Stamp | T | √ | The date and time that this Subscription Version record was created. |
| Modified Time Stamp | T | √ | The date and time that this Subscription Version record was last modified.<br><br>The default value is the Create Time Stamp. |
| Porting to Original | B | √ | A boolean that indicates whether the Subscription Version created is to be ported back to the original Service Provider.<br><br>The default value is False. |
| End User Location Value | C (12) | | For future use. |
| End User Location Value Type | C (2) | | For future use. |
| Modify Request Timestamp | T | | The date and time that the Subscription Version Modify request was made. |
| Modify Broadcast Timestamp | T | | The date and time that broadcasting began to all local SMS systems for the modification of the Subscription Version. |
| Modify Broadcast Complete Timestamp | T | | The date and time that all local SMS systems successfully acknowledged or the retries were exhausted for the modification of the Subscription Version |
| Billing ID | C (4) | | For future use.<br><br>The default value is the Facilities Based Service Provider ID. |
| Status Change Cause Code | N (2) | | Used to specify reason for conflict when old Service Provider Authorization is set to False, or to indicate NPAC SMS initiated cancellation. Valid values are: |

© 1997 Lockheed Martin IMS      8      North American Numbering Council (NANC)
Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.      May 5April 7, 1997

| SUBSCRIPTION VERSION DATA MODEL | | | |
|---|---|---|---|
| Attribute Name | Type (Size) | Required | Description |
| | | | • No value<br>• General Conflict<br>• LSR Not Received<br>• FOC Not Issued<br>• Due Date Mismatch<br>• Vacant Number Port<br>• NPAC SMS Automatic Conflict from Cancellation<br>• NPAC SMS Automatic Cancellation |

Table 0-5  Subscription Version Data Model

## 3.1.4 Network Data

The network data represents the attributes associated with network topology and routing data with respect to local number portability. This information is used by the respective network elements to route ported numbers to the new termination points. The data items that need to be administered by Network Data Administration functions are identified in Table 3-6, Table 3-7, and Table 3-8:

| PORTABLE NPA-NXX DATA MODEL | | | |
|---|---|---|---|
| Attribute Name | Type (Size) | Required | Description |
| NPA-NXX Id | N | √ | A unique sequential number assigned upon creation of the NPA-NXX record. |
| NPA-NXX | C (6) | √ | The NPA-NXX open for porting. |
| NPAC Customer ID | C (4) | | An alphanumeric code which uniquely identifies an NPAC customer. |
| NPA-NXX Effective Date | T | √ | The date that the NPA-NXX is available for LNP in the NPAC Customer networks. |
| Split new NPA | C (6) | | The new NPA-NXX for an NPA split. |
| Split Activation Date | T | | The date that the new NPA-NXX becomes available for use in an NPA split. This date represents the beginning of the permissive dialing period. |
| Split Disconnect Date | T | | The data that the old NPA-NXX becomes unavailable for use in an NPA split. This date represents the end of the permissive dialing period. |
| NPA-NXX has been | B | √ | A boolean that indicates if any TN within this NPA-NXX |

| PORTABLE NPA-NXX DATA MODEL | | | |
|---|---|---|---|
| **Attribute Name** | **Type (Size)** | **Required** | **Description** |
| Ported | | | has been ported.<br><br>The default value is false, indicating that no TN within this NPA-NXX has yet been ported. |

**Table 0-6 Portable NPA-NXX Data Model**

| LRN DATA MODEL | | | |
|---|---|---|---|
| **Attribute Name** | **Type (Size)** | **Required** | **Description** |
| LRN ID | N | √ | A unique sequential number assigned upon creation of the LRN record. |
| LRN | TN | √ | The LRN is the unique identifier for the switch on which the portable NPA-NXXs reside. |
| NPAC Customer ID | C (4) | √ | An alphanumeric code which uniquely identifies an NPAC Customer. |

**Table 0-7 LRN Data Model**

| LSMS FILTERED NPA-NXX DATA MODEL | | | |
|---|---|---|---|
| **Attribute Name** | **Type (Size)** | **Required** | **Description** |
| LSMS Filter NPA-NXX ID | N | √ | A unique sequential number assigned upon creation of the LSMS Filtered NPA-NXX record. |
| NPAC Customer ID | C (4) | √ | An alphanumeric code that uniquely identifies the LSMS NPAC Customer who is filtering subscription version broadcasts. |
| NPA-NXX | C (6) | √ | The NPA-NXX for which the LSMS is filtering subscription version broadcasts. |
| Creation Timestamp | T | √ | Date the filtered NPA-NXX was created. |

**Table 0-8 LSMS Filtered NPA-NXX Data Model**

# 3.2 NPAC Personnel Functionality

The following requirements describe the functionality required by the NPAC SMS to support the daily operation of the Regional LNP SMS support staff. These requirements define the high level functionality required by the system with the specifics of each requirement defined in more detail in sections 4 and 5.

**R3-1**

**DELETE**

**R3-2**

**DELETE**

**R3-3**          Create NPA-NXX data for a Service Provider

NPAC SMS shall allow NPAC personnel to create a new LNP NPA-NXX for a Service Provider.

**R3-4.1**

(Duplicate - refer to R4-1)

**R3-4.2**

(Duplicate - refer to R4-3)

**R3-5**

(Duplicate - refer to R4-2)

**R3-6**          Administer mass changes for NPA splits, LRN changes, LIDB changes, CLASS, ISVM and CNAM

NPAC SMS shall allow NPAC personnel to perform NPA splits, LRN, LIDB, CLASS, ISVM and CNAM mass changes that affect multiple Subscription Versions, with version statuses of active, pending, conflict, cancel pending, deferred disconnect or failed.

**R3-7.1          Administer mass changes for one or more Subscription Versions**

NPAC SMS shall allow NPAC personnel to select Subscription Versions which match a user defined TN and specify a mass update action to be applied against all Subscription Versions selected (except for Subscription Versions with a status of old, partial failure, sending, or canceled).

© 1997 Lockheed Martin IMS                    11                    North American Numbering Council (NANC)
Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.                    May 5April 7, 1997

**R3-7.2     Administer mass changes for one or more Subscription Versions for a TN range**

NPAC SMS shall allow NPAC personnel to select Subscription Versions which match a TN range, and specify a mass update action to be applied against all Subscription Versions selected (except for Subscription Versions with a status of old, partial failure, sending, or canceled).

# 3.3 System Functionality

**R3-8     Off-line batch updates for Local SMS Disaster Recovery**

NPAC SMS shall support an off-line batch download (via 4mm DAT tape and FTP file download) to mass update Local SMSs with Subscription Versions and Service Provider Network data.

The contents of the batch download are:

*   Subscriber data:
    - Version ID
    - TN
    - LRN
    - New Current Service Provider ID
    - Activation Request Timestamp
    - Version Status
    - CLASS DPC
    - CLASS SSN
    - LIDB DPC
    - LIDB SSN
    - ISVM DPC
    - ISVM SSN
    - CNAM DPC
    - CNAM SSN
    - End User Location - Value
    - End User Location - Type
    - Billing ID
    - LNP Type
    - Download Reason
    - Network data:
    - NPAC Customer ID
    - NPAC Customer name
*   NPA-NXX-Download Data:
    - NPA-NXX ID
    - NPA-NXX Value
    - NPAC Customer ID
    - Effective TimeStamp
    - Download Reason
*   LRN-Download Data:
    - LRN ID
    - LRN Value
    - Download Reason

© 1997 Lockheed Martin IMS                                    12                    North American Numbering Council (NANC)
                                                                                                      Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.                                        May 5April 7, 1997

**R3-9          NPAC SMS download of network data to the Local SMS**

NPAC SMS shall be able to communicate creation or deletion of NPA-NXX data and LRN data for a Service Provider to Local SMSs.

The contents of the network download are:

- Network data:
    - NPAC Customer ID
    - NPAC Customer Name
- NPA-NXX-Download Data:
    - NPA-NXX ID
    - NPA-NXX Value
    - Effective TimeStamp
    - Download Reason
- LRN-Download Data:
    - LRN ID
    - LRN Value
    - Download Reason

**R3-10          NPAC SMS notification of NPA-NXX availability to the Service Providers**

NPAC SMS shall inform all Service Providers about the availability of the NPA-NXXs for porting via the NPAC SMS to Local SMS interface or the Web bulletin board. The NPA-NXX data fields sent via the NPAC SMS to Local SMS interface are:

- NPAC Customer ID
- NPAC Customer Name
- NPA-NXX ID
- NPA -NXX Value
- Effective Date
- Download Reason

The NPA-NXX data fields sent to the WEB bulletin board are:

- NPAC Customer ID
- NPAC Customer Name
- NPA-NXX Value
- Effective Date

**R3-11          NPAC SMS notification of LRNs and Service Provider data by Service Provider**

NPAC SMS shall inform all Service Providers about a new Service Provider and the associated LRNs. NPAC SMS shall post the new Service Providers and/or new LRNs on the Web bulletin board.

The Service Provider data fields sent to the WEB bulletin board are:

- NPAC Customer ID
- NPAC Customer Name
- NPAC Customer Type
- Contact Type
- Contact Name
- Contact Address 1

© 1997 Lockheed Martin IMS                13                North American Numbering Council (NANC)
Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.                May 5April 7, 1997

- Contact Address 2
- Contact City
- Contact State
- Contact Zip
- Contact Province
- Contact Country
- Contact Phone
- Contact Fax
- Contact Pager
- Contact Pager PIN
- Contact Email

The LRN data fields sent to the WEB bulletin board are:

- NPAC Customer ID
- NPAC Customer Name
- LRN Value

**R3-12**

**(Duplicate - refer to R5-18)**

**R3-13      NPAC SMS mass change update capability to the Local SMS**

NPAC SMS shall have the capability to identify all Subscription Versions affected by mass changes, (such as NPA splits), and automatically carry out the required updates to modified data in the Local SMSs.

# 3.4 Additional Requirements

**RX3-1.1      Service Provider NPA-NXX Data Addition**

NPAC SMS shall allow Service Providers to add their NPA-NXX data via the NPAC SMS to Local SMS interface or the SOA to NPAC SMS interface.

**RX3-1.2      Service Provider LRN Data Addition**

NPAC SMS shall allow Service Providers to add their LRN data via the NPAC SMS to Local SMS interface or the SOA to NPAC SMS interface.

**RX3-2**

**DELETE**

**RX3-3.1      Service Provider NPA-NXX Data Deletion**

NPAC SMS shall allow Service Providers to delete their NPA- NXX data via the NPAC SMS to Local SMS interface or the SOA to NPAC SMS interface provided the changes do not cause any updates to the Subscription Versions.

**RX3-3.2       Service Provider LRN Data Deletion**

NPAC SMS shall allow Service Providers to delete their LRN data via the NPAC SMS to Local SMS interface or the SOA to NPAC SMS interface provided the changes do not cause any updates to the Subscription Versions.

# 3.5 Requirements Defined in Post-Award Activities

**RN3-1       NPA Split Permissive Dialing**

NPAC SMS shall support a permissive dialing period, during which dialing of both NPAs is allowed during NPA splits.

**RN3-2       NPA split**

NPAC SMS shall accept both the old and new NPAs during the permissive dialing period, but will only respond and download with the new NPA.

**RN3-3       NPA Split Permissive Dialing Cleanup**

NPAC SMS shall perform an update to remove NPAC SMS mapping and deactivate Subscription Versions associated with an NPA split after the expiration date of the permissive dialing period.

**RR3-1       Service Provider Download Indicator**

NPAC SMS shall provide a mechanism for the Service Provider to indicate whether or not they want NPA-NXX data and LRN data downloaded to their Local SMS via the NPAC SMS to Local SMS Interface.

**RR3-2       Service Provider Download Indicator Default**

NPAC SMS shall download NPA-NXX data and LRN data via the NPAC SMS to Local SMS Interface if the indicator is ON.

**R3-14       Bulk Database Extracts**

NPAC SMS shall periodically perform NPAC SMS database extracts of active Subscription Versions on an NPA-NXX basis to an ASCII file.

**R3-15       FTP Site for Database Extracts**

NPAC SMS shall store database extract files at the NPAC SMS FTP site for Local SMS file retrieval.

**R3-16       Database Extract File Creation**

NPAC SMS shall allow NPAC personnel to specify database extract file creation on a weekly, monthly, or quarterly basis.

© 1997 Lockheed Martin IMS                    15                  North American Numbering Council (NANC)
Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.                    May 5April 7, 1997

**R3-17**         **Scope of Database Extract File Creation**

NPAC SMS shall allow NPAC personnel to specify an NPA-NXX for database extract file creation.

**RR3-3**         **NPAC SMS Input Restrictions**

NPAC SMS shall prevent the entry of pipe characters (|) as part of text strings.

**RR3-4**         **Create LRN data for a Service Provider**

NPAC SMS shall allow NPAC personnel to create a new LRN for a service provider.

# 3.6 Requirements Defined in Change Orders

**RR3-5**         **Create Filtered NPA-NXX for a Local SMS**

NPAC SMS shall allow a Service Provider to create a filtered NPA-NXX for a given Local SMS, via the NPAC SMS to Local SMS interface and the SOA to NPAC SMS interface, which results in the SMS broadcasting subscriptions with the filtered NPA-NXX to the Local SMS.

**RR3-6**         **Delete Filtered NPA-NXX for a Local SMS**

NPAC SMS shall allow a Service Provider to delete a filtered NPA-NXX for a given Local SMS, via the NPAC SMS to Local SMS interface and the SOA to NPAC SMS interface, which results in the SMS **NOT** broadcasting subscriptions with the filtered NPA-NXX to the given Local SMS.

**RR3-7**         **Query Filtered NPA-NXXs for a Local SMS**

NPAC SMS shall allow a Service Provider to query filtered  NPA-NXXs for a given Local SMS via the NPAC SMS to Local SMS interface and the SOA to NPAC SMS interface.

**RR3-8**         **Query Filtered NPA-NXXs - NPA-NXX Not Provided**

NPAC SMS shall return to the requesting Service Provider all filtered NPA-NXXs for a given Local SMS when the NPA-NXX is **NOT** input upon a Filter NPA-NXX Query via the NPAC SMS to Local SMS interface and the SOA to NPAC SMS interface.

**RR3-9**         **Query Filtered NPA-NXXs - NPA-NXX Provided**

NPAC SMS shall return to the requesting Service Provider a single NPA-NXX for a given Local SMS when the NPA-NXX is input upon a filtered NPA-NXX Query via the NPAC SMS to Local SMS interface and the SOA to NPAC SMS interface.

© 1997 Lockheed Martin IMS                    16                    North American Numbering Council (NANC)
Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.                    May 5April 7, 1997

**RR3-10    Business Hours and Days**

NPAC SMS shall support definition and processing of business hours and days for operations involving business time calculation.

**RR3-11    Business Day Definition**

NPAC SMS business days shall be Monday through Friday excluding NPAC operations-defined holidays.

**RR3-12.1    Business Day Duration - Tunable Parameter**

NPAC SMS shall provide a Business Day Duration tunable parameter, which is defined as the number of hours from the tunable business day start time.

**RR3-12.2    Business Day Duration - Tunable Parameter Modification**

NPAC SMS shall allow the NPAC SMS Administrator to modify the Business Day Duration tunable parameter.

**RR3-12.3    Business Day Duration - Tunable Parameter Default**

NPAC SMS shall default the Business Day Duration tunable parameter to 12 hours.

**RR3-13.1    Business Day Start Time - Tunable Parameter**

NPAC SMS shall provide a Business Day Start Time tunable parameter, which is defined as the start of the business day in Central Standard Time.

**RR3-13.2    Business Day Start Time - Tunable Parameter Modification**

NPAC SMS shall default the Business Day Start Time tunable parameter to the value specified by the contracting region.

**RR3-13.3    Business Day Start Time - Tunable Parameter Default**

NPAC SMS shall default the Business Day Start Time tunable parameter to 7:00 AM, Central Standard Time.

**RR3-14    Business Holidays**

NPAC SMS shall allow NPAC operations personnel to add/delete business holidays.

© 1997 Lockheed Martin IMS                    17          North American Numbering Council (NANC)
                                                                      Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.                    May 5April 7, 1997

# 4. Service Provider Data Administration

## 4.1 Service Provider Data Administration and Management

Service Provider Data Administration functions allow NPAC personnel to receive and record data needed to identify authorized LNP Service Providers. The Service Provider data indicates who the LNP Service Providers are and includes location, contact name, security, routing, and network interface information.

Service Provider Administration supports functionality to manage Service Provider data. There can be only one instance of Service Provider data for a specific LNP Service Provider.

**AR1-1**      **Service Provider ID**

All NPAC Customers will obtain a unique Service Provider ID from a proper source.

## 4.1.1 User Functionality

**R4-1**      **Create Service Providers**

The NPAC SMS shall allow NPAC Personnel to add a Service Provider.

**R4-2**      **Modify Service Providers**

NPAC SMS shall allow modification of Service Provider data via the NPAC SMS to Local SMS interface or the SOA to NPAC SMS interface. Service Providers can only modify their own data.

**R4-3**      **Delete Service Providers**

NPAC SMS shall allow NPAC personnel to delete a Service Provider.

**R4-4**      **View of Service Provider Data**

NPAC SMS shall allow NPAC personnel to view Service Provider data.

© 1997 Lockheed Martin IMS        1        North American Numbering Council (NANC)
Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.      May 5April 7, 1997

**R4-5.1**        View List of Service Provider Subscriptions

NPAC SMS shall allow NPAC personnel to view a list of Subscription Versions associated with the Service Provider.

**R4-5.2**        Authorized Service Providers View Their Own Data

NPAC SMS shall allow authorized Service Provider personnel to view their own Service Provider data via the SOA to NPAC SMS interface, the NPAC SMS to Local SMS interface, and the NPAC SOA Low-tech Interface.

**RX4-2**        Authorized Service Providers Modify Their Own Data

NPAC SMS shall allow authorized Service Provider personnel to modify their own Service Provider data.

**RR4-4.1**        Broadcast NPAC Customer Names

NPAC SMS shall broadcast all additions, modifications, and deletions of NPAC Customer names via the NPAC SMS to Local SMS interface.

# 4.1.2  System Functionality

This section describes NPAC SMS functionality required to support the NPAC personnel requests described in the above section. The following specifies user requests and lists the NPAC SMS functionality needed to support those requests.

## 4.1.2.1  Service Provider Data Creation

NPAC personnel can request that Service Provider data be created in the NPAC SMS. The functionality described below enables a new instance of Service Provider data for a Service Provider to be created, provided that no other Service Provider data exists for the Service Provider.

**R4-6**        New Service Provider ID

NPAC SMS shall require the following to be entered to identify the Service Provider, when NPAC personnel are creating a new Service Provider:

Service Provider ID - the alphanumeric identifier of the Service Provider. This ID must be unique.

**R4-7.1**        Examine for Duplicate Service Provider ID

NPAC SMS shall check to see if there is an existing Service Provider with the same Service Provider ID.

**R4-7.2**        Error notification of Duplicate Service Provider

NPAC SMS shall inform the user that the Service Provider data already exists for the Service Provider, if it does exist, and that the new Service Provider data cannot be created.

**R4-8        Service Provider Data Elements**

NPAC SMS shall require the following data if there is no existing Service Provider data:

1.   Service Provider name, address, phone number, and contact organization.

2.   NPAC customer type.

3.   Service Provider allowable functions.

4.   Service Provider Network Address of NPAC SMS to Local SMS interface.

5.   Service Provider Network Address of NPAC SMS to SOA interface.

6.   Service Provider Security Contact. Contact data is security data when Contact Type is "SE."

7.   Service Provider Repair contact name and phone number. The default Service Provider Repair Contact and phone number shall be the same as the Service Provider contact and phone number, if the Service Provider Repair Contact information is left blank.

8.   Service Provider billing name, address, phone number, and billing contact for NPAC SMS billing. The default for the Service Provider Billing data shall be the same as the Service Provider data, if the Service Provider Billing information is left blank.

9.   Service Provider Download Indicator

10.  Service Provider Maximum Query

The following data is optional:

•   Service Provider Contact Type: SOA Contact, Local SMS, Web, Network Communications, Conflict Resolution, Operations, and User Administration Contact Address Information.

**R4-9        Service Provider data validation**

NPAC SMS shall validate that all required Service Provider data has been received, after the Service Provider data has been collected.

**R4-10        Notification of successful add for new Service Provider**

NPAC SMS shall notify NPAC personnel upon successful creation of the new Service Provider.

**R4-11        Failure notification of Service Provider creation**

NPAC SMS shall issue an appropriate error message upon unsuccessful creation of the new Service Provider.

© 1997 Lockheed Martin IMS                    3                    North American Numbering Council (NANC)
Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.                    May 5April 7, 1997

## 4.1.2.2 Service Provider Data Modification

NPAC personnel and the SOA to NPAC SMS interface and the NPAC to Local SMS interface can request that Service Provider data be modified in the NPAC SMS. The functionality described below enables the user to modify data for the Service Provider.

**R4-12**

**(Duplicate - refer to R4-2)**

**R4-13        Service Provider Key selection for modifying Service Provider data**

NPAC SMS shall require one of the following data items to identify the Service Provider data to be modified:

Service Provider ID
or
Service Provider Name

The Service Provider ID is required over the SOA to NPAC SMS interface and the NPAC SMS to Local SMS interface.

**R4-14        Error notification of invalid Service Provider ID or Name during Modify**

NPAC SMS shall issue an appropriate error message to the user if the Service Provider data to be modified does not exist.

**R4-15.1        Modify restrictions on Service Provider data - Service Providers**

NPAC SMS shall allow Service Provider data to be modified or added to the Service Provider data with the exception of the data listed in **Table 3-2**.

**R4-15.2        Modify restrictions on Service Provider data - NPAC Operations Personnel**

NPAC SMS shall allow NPAC Operations personnel to modify the data in **Table 3-2**, with the exception of the NPAC Customer ID.

**R4-16        Re-validation of Service Provider data after Modify**

NPAC SMS shall revalidate that all required Service Provider data is present when a user attempts to submit modified Service Provider data.

**R4-17        Modify Validation Error Message**

NPAC SMS shall issue an appropriate error message to the user if the Service Provider data fails validation on a modify.

© 1997 Lockheed Martin IMS                                   4                          North American Numbering Council (NANC)
Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.                          May 5April 7, 1997

**R4-18.1**

**DELETE**

**R4-18.2**

**DELETE**

**R4-18.3**

**DELETE**

## 4.1.2.3   Delete Service Provider Data

NPAC personnel can request that the Service Provider data be deleted. Deleted Service Provider data will be written to a history file. The functionality described below enables a user to delete data for the Service Provider.

**R4-19**

(Duplicate - refer to R4-3)

**R4-20**            **Service Provider key for delete**

NPAC SMS shall require the Service Provider ID and/or Service Provider name from the user to identify the Service Provider data to be deleted.

**R4-21**            **Error Message for Delete key search**

NPAC SMS shall generate an error message and send it to the request originator, if the Service Provider data does not exist, or if is has already been deleted and exists only in a history file. NPAC SMS will not proceed further with the deletion request.

**R4-22.1**          **No Subscription Versions during Service Provider Delete**

NPAC SMS shall perform the deletion of the Service Provider data, notify the user that the deletion request was successful, if there are no affected Subscription Versions, and write the Service Provider data to a history file.

**R4-22.2**          **Subscription during Service Provider Delete**

NPAC SMS shall notify the user that the request to delete the Service Provider data cannot be completed until the affected individual Subscription Versions are modified, if affected Subscription Versions are found.

**R4-22.3**          **Service Provider subscription restrictions during Network Data Delete.**

NPAC SMS shall determine if there are any Subscription Versions being affected by the NPA-NXX and/or LRN data being deleted.

© 1997 Lockheed Martin IMS                    5                    North American Numbering Council (NANC)
Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.                    May 5April 7, 1997

# 4.1.3  Service Provider Queries

The query functionality discussed in this section will give users the ability to view Service Provider and Subscription data. A user may not be able to modify a particular data item because they do not have the proper security permissions, therefore the data is made available via NPAC SMS for read-only purposes.

## 4.1.3.1  User Functionality

**R4-23**

(Duplicate - refer to R4-5.2)


**R4-24.1**     **Display of Service Provider ID and related subscription data**

NPAC SMS shall allow NPAC personnel to view all Subscription Versions associated with a Service Provider ID and/or Service Provider Name.


**R4-24.2**     **Display of LRN and related subscription data**

NPAC SMS shall allow NPAC personnel to view all Subscription Versions associated with an LRN.


**R4-24.3**     **Display of NPA-NXX and related subscription data**

NPAC SMS shall allow NPAC personnel to view all Subscription Versions associated with an NPA-NXX.


## 4.1.3.2  System Functionality

The following specifies NPAC SMS functionality needed to support the user requests described above.


### 4.1.3.2.1  Service Provider Query

**R4-25**     **Service Provider as Key for queries**

NPAC SMS shall require the Service Provider ID and/or the Service Provider Name for queries regarding Service Provider data.


**R4-26.1**     **Error message for unknown Service Provider during a query**

NPAC SMS shall provide the request originator with a message indicating that there was no data in the NPAC SMS that matched the search keys for a Service Provider query, if no match was found.


**R4-26.2**     **Results returned to Service Provider during a query**

NPAC SMS shall return all Service Provider data associated with the Service Provider ID and/or Service Provider Name, as listed in Tables 3-1, 3-2, and 3-3, if the Service Provider data matches the query criteria.  Service Providers are only allowed to query their own data.

© 1997 Lockheed Martin IMS       6       North American Numbering Council (NANC)
Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.       May 5April 7, 1997

**R4-27        Service Provider Query Types**

NPAC SMS shall receive the Service Provider ID, a request to view subscription data, and optionally the subscription data status types to be returned (e.g., active only, active or pending) for queries regarding subscription data for a specific Service Provider.

**R4-28        Service Provider Information Message during query**

NPAC SMS shall provide the request originator with a message indicating that there was no data in NPAC SMS that matched the search keys, if NPAC SMS does not have subscription data as specified by the request originator.

### 4.1.3.2.2  Subscription List Query

**R4-29        Service Provider subscription query options**

NPAC SMS shall receive the attributes to be searched on for queries regarding Subscription Versions associated with the Service Provider. Allowable attributes are the following data elements from *Table 3-5  Subscription Version Data Model*:

- Subscription Version ID
- Subscription Version Status
- Local Number Portability Type
- Ported Telephone Number
- Old facilities-based Service Provider Due Date
- New facilities-based Service Provider Due Date
- New facilities-based Service Provider ID
- Authorization from old facilities-based Service Provider
- Local Routing Number (LRN)
- Class DPC
- Class SSN
- LIDB DPC
- LIDB SSN
- CNAM DPC
- CNAM SSN
- ISVM DPC
- ISVM SSN
- Billing Service Provider ID
- End User Location Value
- End User Location Type
- Customer Disconnect Date
- Effective Release Date
- Disconnect Broadcast Complete Time Stamp
- Conflict Time Stamp
- Activation Time Stamp
- Cancellation Time Stamp (Status Modified to Cancel Time Stamp)
- New Service Provider Creation Time Stamp
- Old Service Provider Authorization Time Stamp
- Pre-cancellation Status
- Old Service Provider Cancellation Time Stamp
- New Service Provider Cancellation Time Stamp
- Old Time Stamp (Status Modified to Old Time Stamp)

- New Service Provider Conflict Resolution Time Stamp
- Create Time Stamp
- Modify Time Stamp
- Porting To Original
- Status Change Cause Code

### R4-30.1    Service Provider subscription query

NPAC SMS shall return all active Subscription Versions associated with the Service Provider which satisfy the selection criteria, up to a tunable parameter number of Subscription Versions for queries initiated via the NPAC SMS to Local SMS interface.

### R4-30.2    NPAC SMS shall return all Subscription Versions

NPAC SMS shall return all Subscription Versions regardless of Subscription Version status for queries initiated via the NPAC SOA Low-tech Interface.

### R4-30.3

### DELETE

### R4-30.4

### DELETE

### R4-30.5

### DELETE

### R4-30.6    Count of subscription information during a query

NPAC SMS shall return an "out of range" error and the count of subscription records returned by a query, if more than a tunable parameter number of Subscription Versions are found.

### R4-30.7

### DELETE

### R4-30.8    Error Message for Service Provider subscription query

NPAC SMS shall provide the request originator with a message indicating that there was no data in NPAC SMS that matched the search keys, if NPAC SMS does not have Subscription Versions as specified by the request originator.

.

---

# 4.2 Additional Requirements

**RN4-1          Service Provider Network Data Addition/Deletion**

NPAC SMS shall allow Service Providers to add/delete the NPA-NXX and/or LRN data via the NPAC SMS to Local SMS interface and SOA to NPAC SMS interface provided the changes do not cause mass updates to the Subscription Versions.

**RR4-1          Removal of Service Provider with Respect to LRNs**

NPAC SMS shall allow removal of a Service Provider by NPAC personnel only if all associated LRNs are removed, and no Subscription Versions are associated with the LRN.

**RR4-2          Removal of Service Provider with Respect to NPA-NXXs**

NPAC SMS shall allow removal of a Service Provider by NPAC personnel only if all associated NPA-NXXs are removed, and no Subscription Versions are associated with the NPA-NXX.

**RR4-3          Removal of NPA-NXX**

NPAC SMS shall allow removal of an NPA-NXX by NPAC personnel only if no Subscription Versions, except Old or Canceled Subscription Versions, are associated with the NPA-NXX.

**RR4-4.2          Removal of LRN**

NPAC SMS shall allow removal of an LRN by NPAC personnel only if no Subscription Versions, except Old or Canceled Subscription Versions, are associated with the LRN.

# 5. Subscription Management

## 5.1 Subscription Version Management

Subscription Management functions allow NPAC personnel and SOA to NPAC SMS interface users to specify data needed for ported numbers. The subscription data indicates how local number portability should operate to meet subscribers' needs. These functions will be accessible to authorized service providers via an interface (i.e., the SOA to NPAC SMS interface) from their operations systems to the NPAC SMS and will also be accessible to (and performed by) NPAC personnel.

Subscription Management supports functionality to manage multiple versions of subscription data. See Section *0*, *Subscription Version Management*, for more details on the different states of a version.

**RN5-1        Subscription Version Status - Only One Per Subscription**

NPAC SMS shall allow only one pending, cancel pending, conflict, disconnect pending, failed or partial failure Subscription Version per subscription.

**RN5-2        Subscription Version Status - Only One Active Version**

NPAC SMS shall allow only one active Subscription Version per subscription.

**RN5-3        Subscription Version Status - Multiple Old/Canceled**

NPAC SMS shall allow multiple old and/or canceled Subscription Versions per subscription.

## 5.1.1  Subscription Version Management

Subscription Version management provides functionality to manage multiple time-sensitive views of subscription data. This section addresses version management for LNP and the user and system functionality needed for subscription administration. In this context a version may be defined as time-sensitive subscription data.

At any given time, a Subscription Version in the SMS can have one of several statuses (e.g., active, old) and may change status depending on results of different SMS processes (e.g., modification, activation). This section describes the different statuses that a version can have and the SMS processes that can change the status. This section also discusses functionality and data that is needed for Subscription Management.
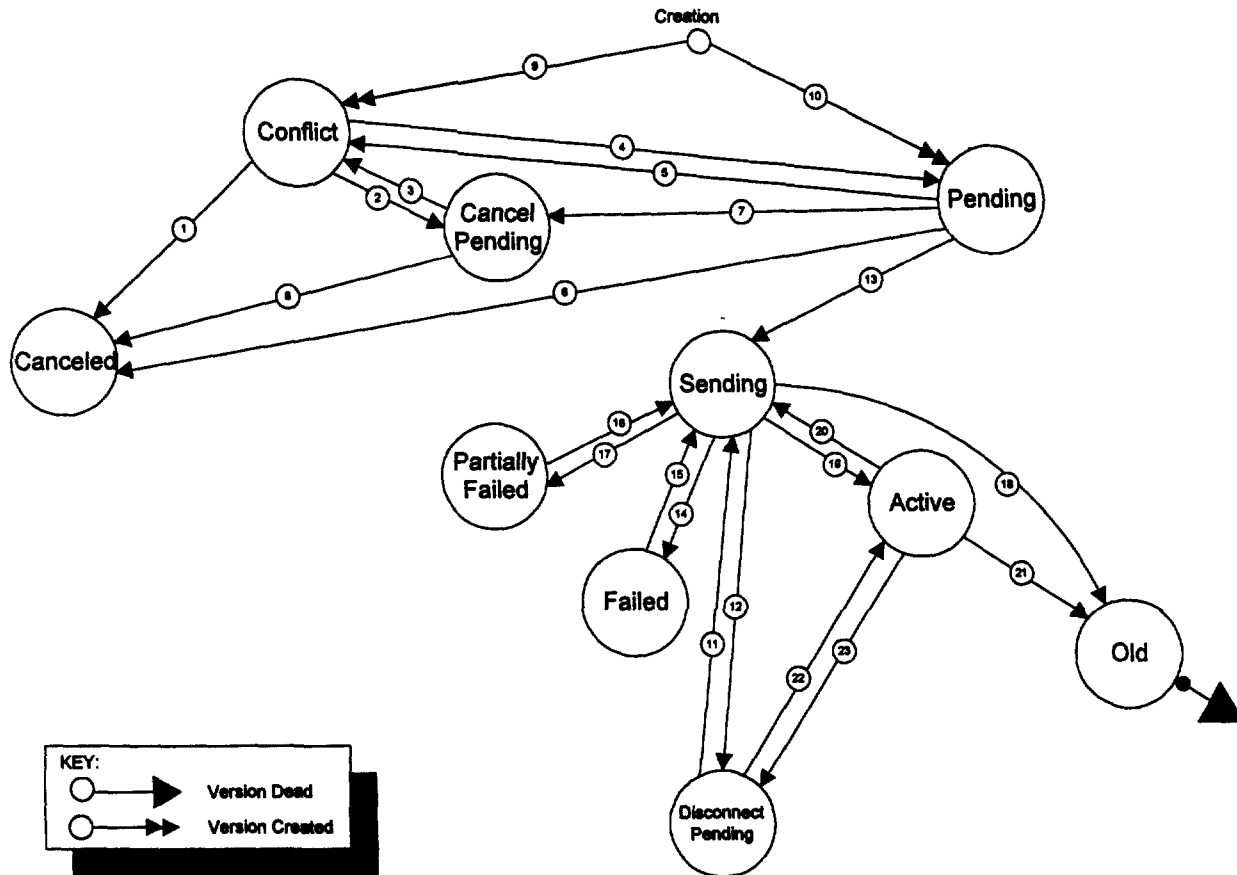
### 5.1.1.1  Version Status

© 1997 Lockheed Martin IMS                    1                    North American Numbering Council (NANC)
Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.                    May 5April 7, 1997

**Figure 5-1 Version Status Interaction Diagram**

| | | Version Status Interaction Descriptions | |
|---|---|---|---|
| **#** | **Interaction Name** | **Type** | **Description** |
| 1 | Conflict to Cancel | NPAC SMS Internal | NPAC SMS automatically sets a Subscription Version in conflict directly to canceled after it has been in conflict for a tunable number of calendar days. |
| | | SOA to NPAC SMS Interface or NPAC SOA Low-tech or Administrative Interface | **Service Provider** User sends a cancellation request for a Subscription Version created by that Service Provider with a status of Conflict that has not been concurred by the other Service Provider. |
| 2 | Conflict to Cancel Pending | NPAC SOA Low-tech or Administrative Interface | User cancels a Subscription Version in conflict or cancels a Subscription Version that was created by or concurred to by both Service Providers. |

| # | Interaction Name | Type | Description |
|---|---|---|---|
| | | SOA to NPAC SMS Interface | User sends a cancellation request for a Subscription Version with a status of conflict or cancels a Subscription Version that was created by or concurred to by both Service Providers. |
| 3 | Cancel Pending to Conflict | NPAC SOA Low-tech or Administrative Interface | User sets a Subscription Version with a status of cancel pending to conflict. |
| | | NPAC SMS Internal | NPAC SMS automatically sets a Subscription Version with a status of cancel pending to conflict if cancel pending acknowledgment has not been received from the new Service Provider within a tunable timeframe. |
| 4 | Conflict to Pending | NPAC Administrative Interface – NPAC Personnel and SOA to NPAC SMS Interface or NPAC SOA Low-tech Interface – Old Service Provider | User removes a Subscription Version from conflict. |
| | | SOA to NPAC SMS Interfaceor NPAC SOA Low-tech Interface - New Service Provider | New Service Provider User removes a Subscription Version from conflict. This action can only occur if a tunable number of hours have elapsed since the Subscription Version was placed in conflict. |
| 5 | Pending to Conflict | NPAC Administrative Interface – NPAC Personnel | 1. User sets a Subscription Version with a status of pending to conflict. <br><br> 2. User creates a Subscription Version for an existing pending Subscription Version for the old Service Provider and does not provide authorization for the transfer of service. |
| | | SOA to NPAC SMS Interface or NPAC SOA Low-tech Interface – Old Service Provider | Old Service Provider sends a Subscription Version creation or modification request for a Subscription Version with a status of pending, which revokes the old Service Provider's authorization for transfer of service. This action can only be taken once, and must be taken a tunable number of hours prior to the new Service Provider due date. |
| 6 | Pending to Cancel | NPAC Administrative Interface – NPAC Personnel | User cancels a Subscription Version with a status of pending that has not been concurred by both service providers. |

© 1997 Lockheed Martin IMS     3     North American Numbering Council (NANC)
Functional Requirements Specification Version 1.10

Freely distributable subject to the terms of the GNU GPL, see inside cover notice.     May 5April 7, 1997

| # | Interaction Name | Type | Description |
|---|---|---|---|
| | | SOA to NPAC SMS Interface or NPAC SOA Low-tech Interface | **Service Provider** User sends a cancellation request for a Subscription Version created by that Service Provider with a status of pending that has not been concurred by the other Service Provider. |
| | | NPAC SMS Internal | 1. NPAC SMS automatically sets a pending Subscription Version to cancel after authorization for the transfer of service has not been received from the new Service Provider within a tunable timeframe.<br><br>2. NPAC SMS automatically sets a pending Subscription Version to cancel if an activation request is not received a tunable amount of time after new Service Provider due date. |
| 7 | Pending to Cancel Pending | NPAC Administrative Interface - NPAC Personnel | User cancels a Subscription Version with a status of pending that has been created/concurred by both Service Providers. |
| | | SOA to NPAC SMS Interface or NPAC SOA Low-tech Interface | **Service Provider** User sends a cancellation request for a Subscription Version with a status of pending that has been concurred by the other Service Provider. |
| 8 | Cancel Pending to Cancel | NPAC SMS Internal | NPAC SMS automatically sets a cancel pending Subscription Version to canceled after receiving cancel pending acknowledgment from the concurring Service Provider, or the final cancellation concurrence window has expired without cancel concurrence from the old Service Provider. |
| 9 | Creation - Set to Conflict | NPAC Administrative Interface – NPAC Personnel | User creates a Subscription Version for the old Service Provider and does not provide authorization for the transfer of service. |
| | | SOA to NPAC SMS Interface and NPAC SOA Low-tech Interface – Old Service Provider | User sends an old Service Provider Subscription Version creation request and does not provide authorization for the transfer of service. |

     

| # | Interaction Name | Type | Description |
|---|---|---|---|
| 10 | Creation - Set to Pending | NPAC Administrative Interface – NPAC Personnel | User creates a Subscription Version for either the new or old Service Provider. If the create is for the old Service Provider and authorization for the transfer of service is not provided, refer to # *9, Creation - Set to Conflict, NPAC SOA Low-tech Interface.* |
| | | SOA to NPAC SMS Interface and NPAC SOA Low-tech Interface | User sends a Subscription Version creation request for either the new or old Service Provider. If the create is for the old Service Provider, and authorization for the transfer of service is not provided, refer to # *9, Creation - Set to Conflict, SOA to NPAC SMS LOW-TECH INTERFACE.* |
| 11 | Disconnect Pending to Sending | NPAC SMS Internal | NPAC SMS automatically sets a deferred disconnect pending Subscription Version to sending after the effective release date is reached. |
| 12 | Sending to Disconnect Pending | NPAC SMS Internal | NPAC SMS automatically sets a Subscription Version from sending to disconnect pending when the broadcast of the disconnect pending fails completely. |
| 13 | Pending to Sending | NPAC Administrative Interface - NPAC Personnel | User activates a pending Subscription Version for a Subscription Version with a new Service Provider due date less than or equal to today. |
| | | SOA to NPAC SMS Interface and NPAC SOA Low-tech Interface - New Service Provider | New Service Provider User sends an activation message for a pending Subscription Version for a Subscription Version with a new Service Provider due date less than or equal to today. |
| 14 | Sending to Failed | NPAC SMS Internal | NPAC SMS automatically sets a Subscription Version from sending to failed after all Local SMSs fail Subscription Version activation after the tunable retry period expires. |
| 15 | Failed to Sending | NPAC Administrative Interface – NPAC Personnel | User re-sends a failed Subscription Version. |
| 16 | Partially Failed to Sending | NPAC Administrative Interface – NPAC Personnel | User re-sends a partial failure Subscription Version. |